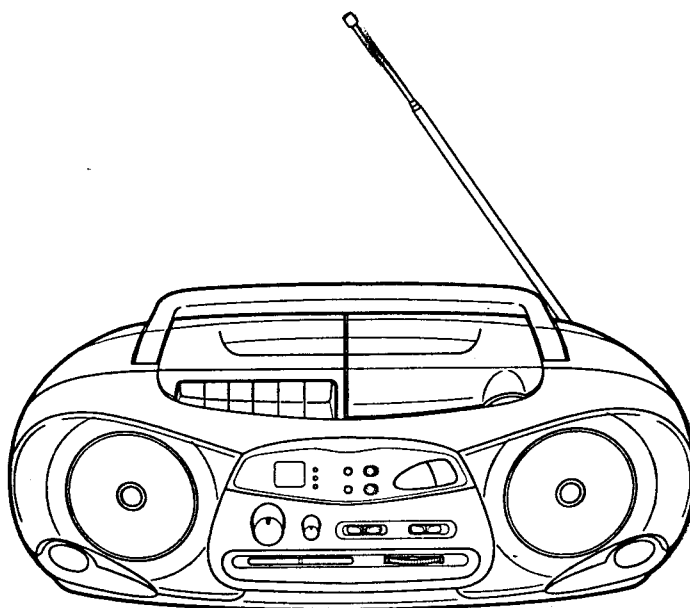


Service Manual

CD Radio Cassette Recorder

MCD-Z100F (AU)



Specifications

(CASSETTE SECTION)

Recording System AC bias, 4 track stereo
Erasing System Magnet erase
Tape speed 4.75 cm / sec.
Fast forward and
rewind time 110 sec. (C-60 tape)
Frequency response 80 - 12,000 Hz

(CD SECTION)

Channel 2 channel
S / N ratio 70 dB
Wow & Flutter Undetectable
Sampling frequency 44.1 kHz
Quantization 16 bits linear / ch
Pickup light source Semi-conductor laser
Pickup wave length 790 nm
Laser output Continuous wave max. 0.6 mW

PRODUCT CODE No.
142 679 04

(RADIO SECTION)

Tuning range FM : 87.5 - 108 MHz
AM : 525 - 1,710 kHz
Antenna FM : Telescopic rod
AM : Built-in ferrite bar

(GENERAL)

Power output 3.0 W x 2 (DC max.)
50 W (P.M.P.O.)
Speaker 10 cm x 2, 4 ohms
Terminal impedance PHONES : 32 ohms
Power source AC : 230 - 240 V, 50 Hz
DC : 12 V (8 "D" size batteries)
Dimensions 460 x 155 x 250 mm (W x H x D)
Weight (approx.) 3.2 kg (without batteries)

*Specifications subject to change without notice.

REFERENCE No. SM580856

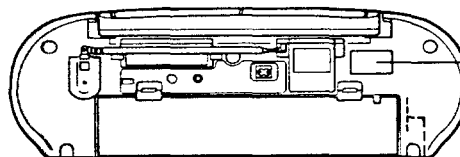
LASER BEAM SAFETY PRECAUTIONS

- Pickup that emits a laser beam is used in this CD player section.

CATION :

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER OUTPUT 0.6 mW Max. (CW)
WAVELENGTH 790 nm



CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

CAUTION-INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

ADVARSEL-USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARNING-ÖSYNLIG LASER STRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.

VORSICHT! -UNSICHTBARE LASERSTRAHLUNG TRITZ AUS, WENN DECKEL GEÖFFNET UND ENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST NICHT, DEM STRAHL AUSSETZEN.

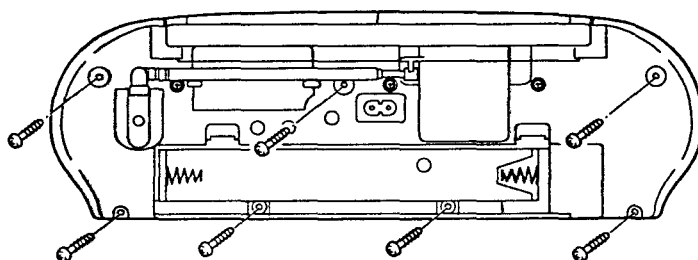
VARO !-Avettaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.



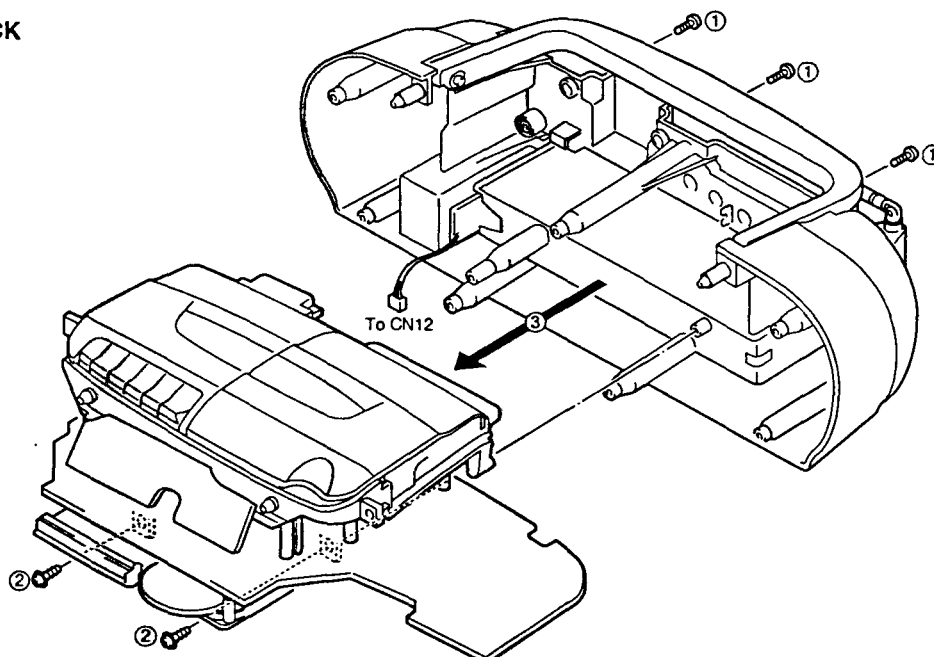
REMOVAL AND INSTALLATION

- Disconnect the power cord's plug from the electrical outlet.
- All wiring should be returned to the original position after work is completed.
- First have ready many new FIXERS(614 129 4971) for replacement.
- Arrange the lead wires so that they are not near the heat sink.

1. CABINET

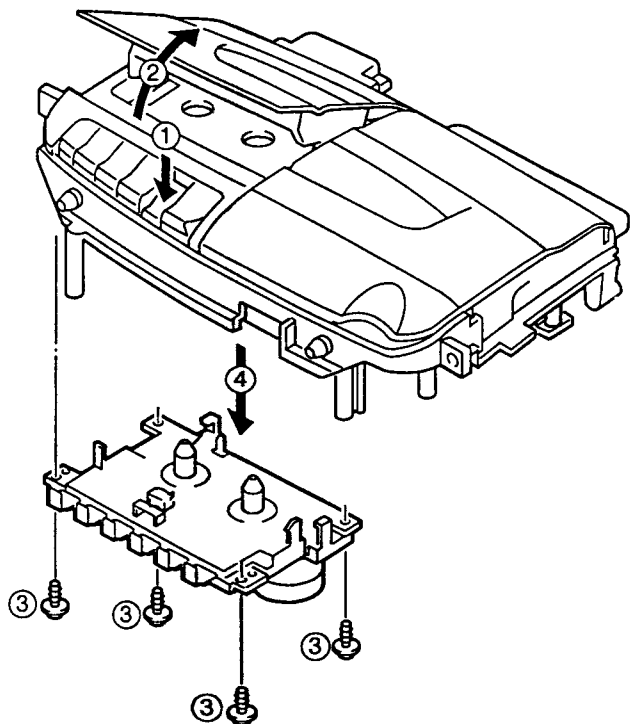


2. TOP PANEL BLOCK

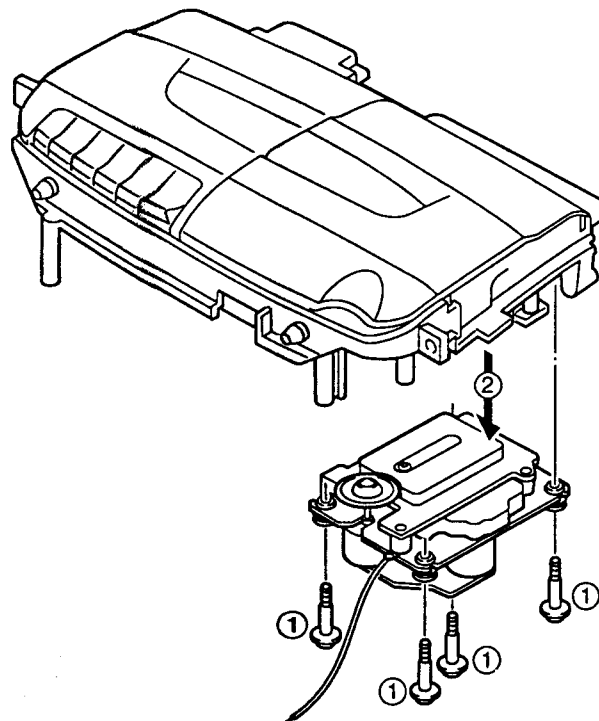


REMOVAL AND INSTALLATION

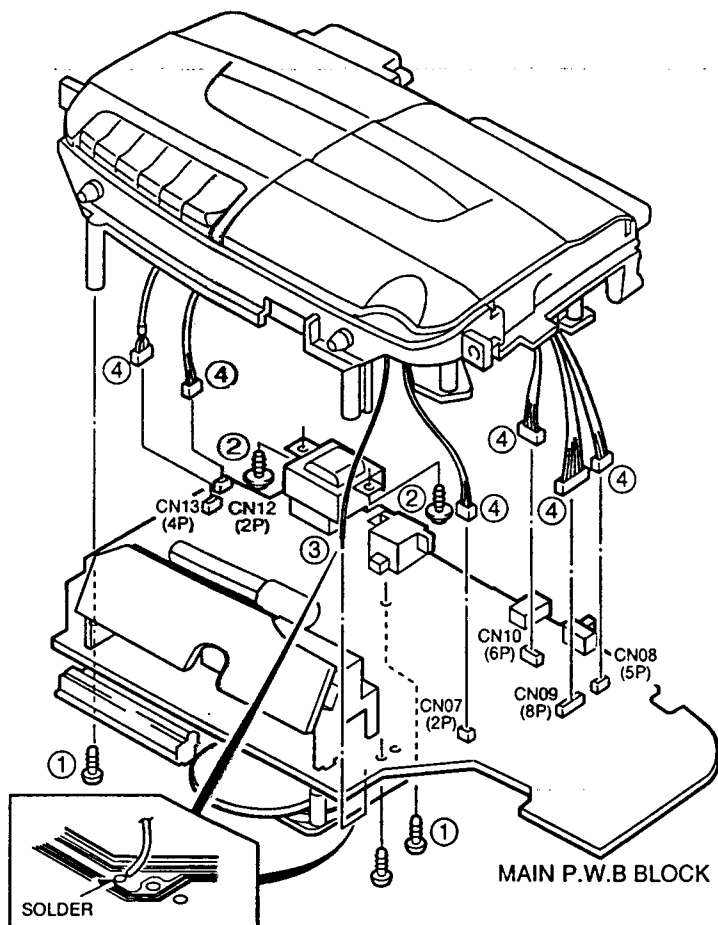
3. CASSETTE TAPE SECTION



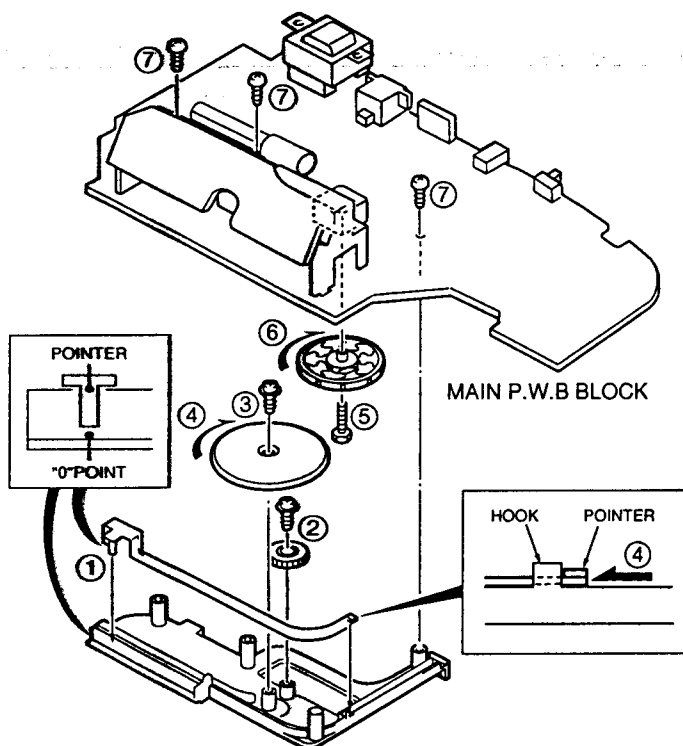
4. CD SECTION



5. MAIN P. W. BOARD SECTION



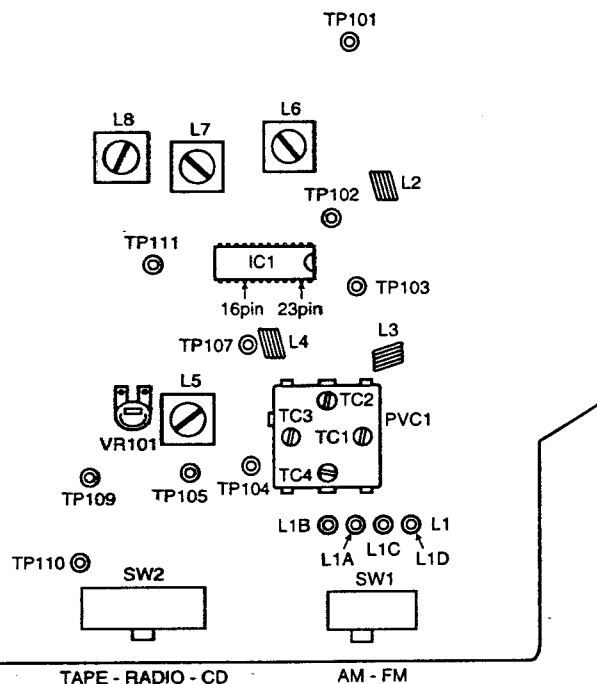
6. "0" POINT ADJUSTMENT



TUNER ADJUSTMENTS

- Use a plastic screw driver for adjustments.
- Adjust the intermediate frequency pf AM and FM to the frequency of ceramic filter.
- Set of unit
 - Supply voltage : DC 12V
 - Output road : Speaker Terminal (8 ohms)
 - Standard output (Volume control) : 50 mW (630 mV) - at the Speaker Terminal
 - Function switch : RADIO

PARTS LOCATION



1. AM ADJUSTMENT

Band select switch : AM

Step		Adjusting Circuit		Connection		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output						
1	IF	Closed the output terminal by sweep generator, it place to VC1(HOT).	Connect sweep generator to IC1 Pin 16(H) and Ground(E).	460 kHz	Low	L7	See Fig.1 For Maximum		
2	Tuning coverge	Connect AM SG to TEST LOOP.	Connect VTVM to speaker terminals.	515 kHz	Low end	L5	Max.		
3				1650 kHz	High end	TC4			
4	Tracking	Connect AM SG to TEST LOOP.	Connect VTVM to speaker terminals.	600 kHz	600 kHz	L1	Max.		
5				1400 kHz	1400 kHz	TC1			
6	Repeat adjustments.								

Set the internal modulation of signal generator to 30% 400Hz.

2. FM ADJUSTMENT

Band select switch : FM

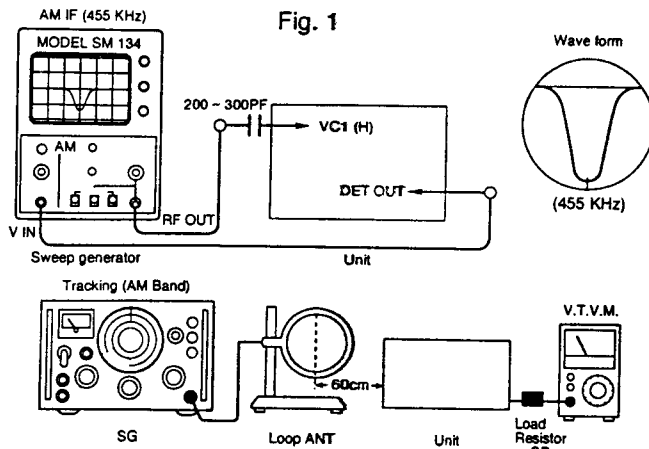
FM Dummy antenna : 75 ohms unbalance

Step		Adjusting Circuit		Connection		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output						
1	IF (S curve)	Connect sweep generator to IC1 pin 23(H) and Ground(E).	Connect sweep generator to IC1 Pin 16(H) and Ground(E).	10.7 MHz	Low	L8	See Fig.2 For Symmetric		
2	Tuning coverage	Connect FM SG to the Upper & same position.	Connect VTVM to speaker terminals.	87.0 MHz	Low end	L4	Max.		
3				109.0 MHz	High end	TC3			
4	Tracking	Connect FM SG to the Upper & same position.	Connect VTVM to speaker terminals.	90.0 MHz	90.0 MHz	L3	Max.		
5				106.0MHz	106.0 MHz	TC2			
6	Repeat adjustments.								

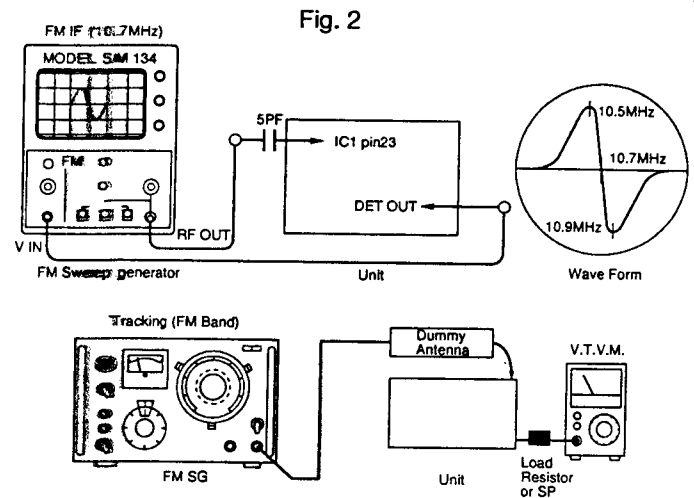
Set the internal modulation of signal generator to 400Hz Dev. 22.5kHz.

TUNER ADJUSTMENTS

AM Equipment Connection



FM Equipment Connection



FM MPX(Multiplex) ADJUSTMENT

FM MPX circuit uses PLL IC, thus adjustments are very easy.

- Connect test instruments as shown in Fig.3.
- Set signal generator frequency to 98 MHz.
- Set stereo signal generator to 90% main signal and 10% pilot signal.

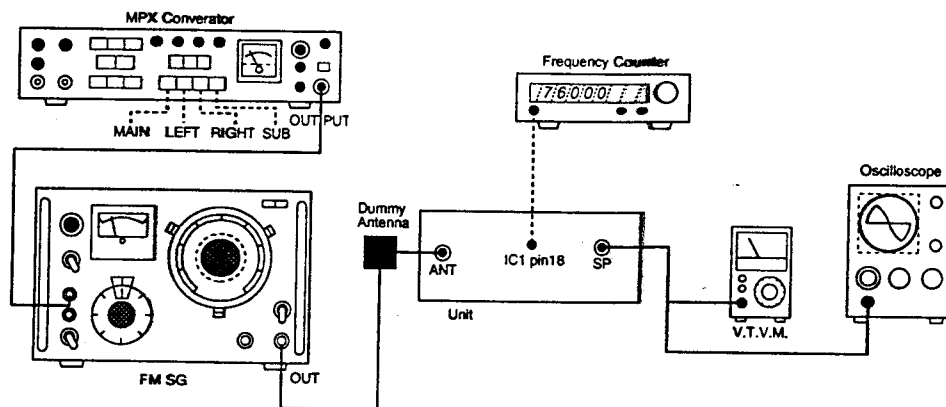


Fig. 3

VCO ADJUSTMENT

Connect frequency counter between as following connection, adjust VR101 for a reading of 76kHz on the counter as shown in Fig. 4.

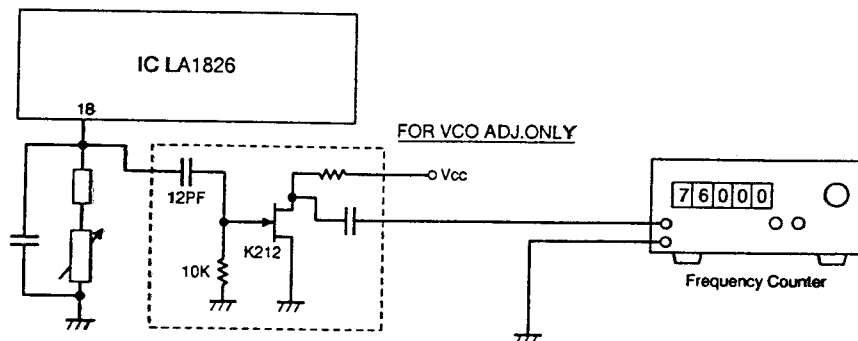
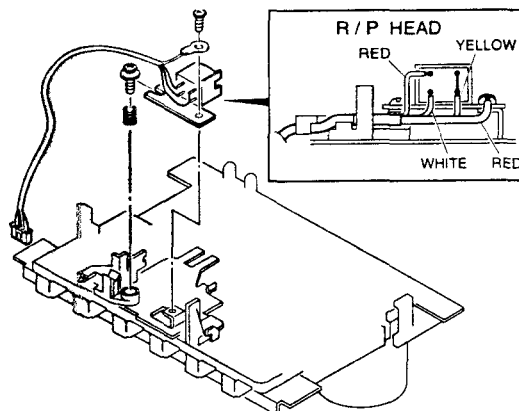


Fig. 4

TAPE DECK ADJUSTMENTS

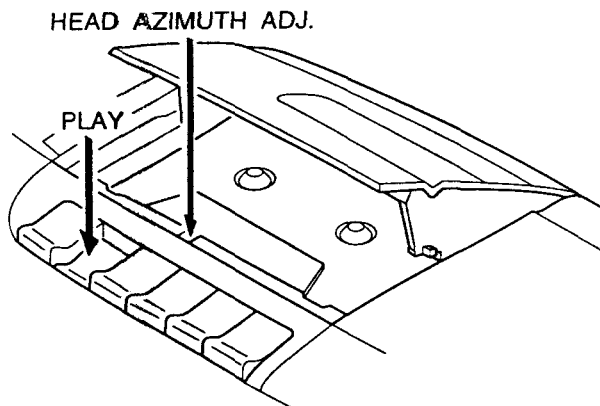
HEAD REPLACEMENT

After replacement, demagnetize the heads by using a degausser.
 Be sure to clean the heads before attempting to make any adjustments.
 All wiring should be returned to the original position after work is completed.

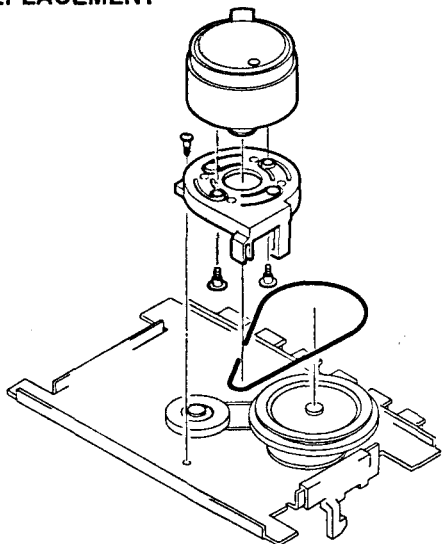


HEAD AZIMUTH ADJUSTMENT

Connect the oscilloscope to the PHONES socket.
 Load the test tape (MTT-113N, etc., 10 kHz) for azimuth adjustment.
 Press the PLAY button.
 Use a cross-tip screwdriver to turn the screw for azimuth adjustment so that the left and right outputs are maximized.
 Press the STOP button.
 After completion of the adjustment, use thread lock (TB-1401B) to secure the azimuth-adjustment screw.

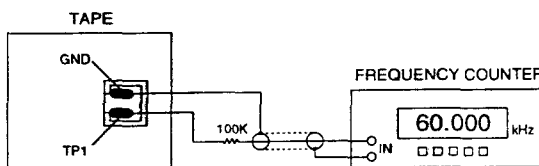


MOTOR REPLACEMENT



BIAS FREQUENCY ADJUSTMENT

-) Connect the frequency counter to the HEAD terminal.
-) Load the test tape (TDK-AD60, etc.).
-) Press the REC & PLAY button.
-) Use a flat-tip screwdriver to turn the L9 for BIAS adjustment so that the frequency counter becomes 65+/-2kHz.

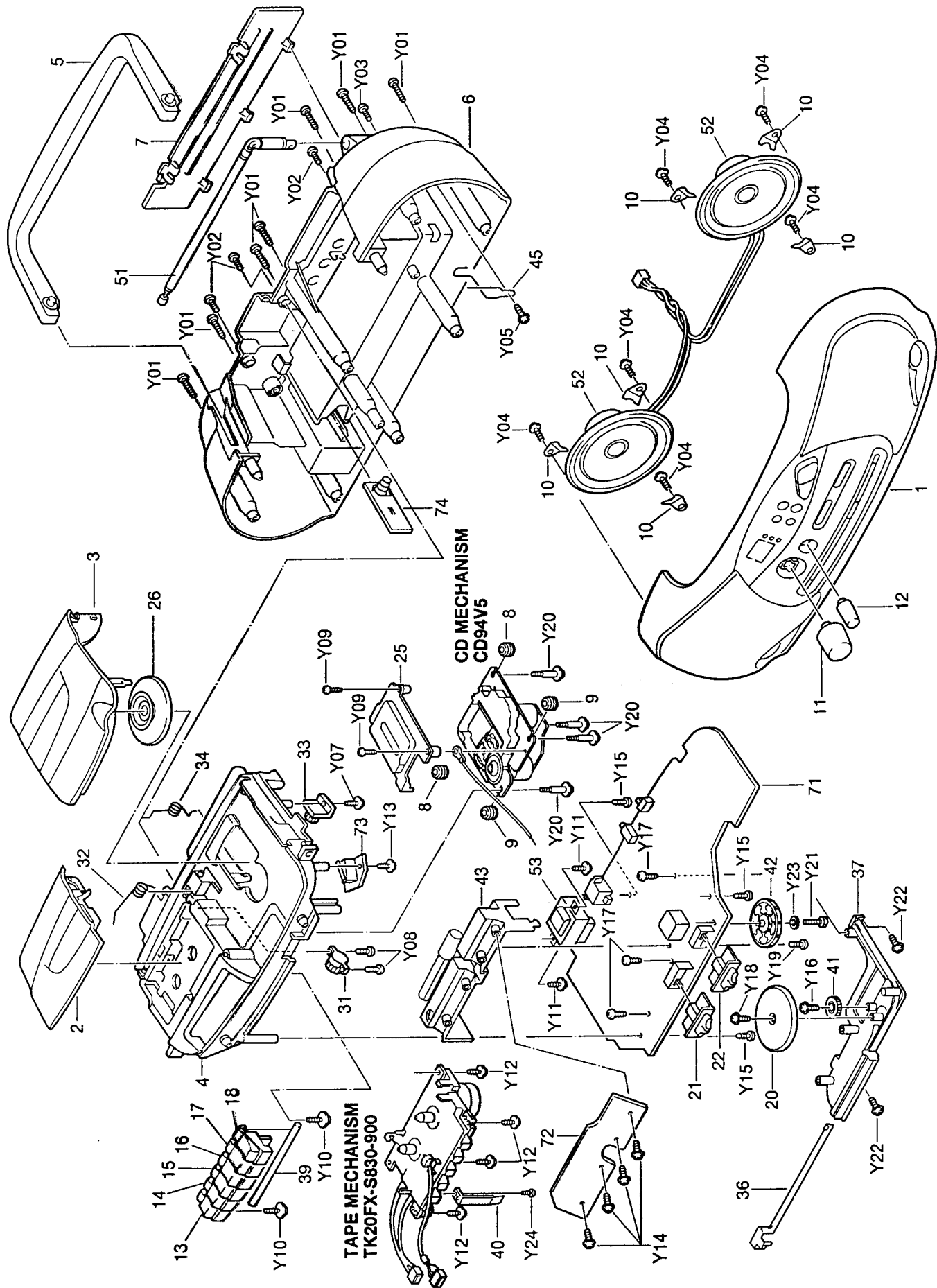


CHECKING THE MECHANISM TORQUES AND TENSION

Clean the head, capstan and pinch roller before making any measurement.

Measurement	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY : TW-2111A F.FWD/REW : TW2231	PLAY : TW-2111A	Drive-power cassette TW-2412
PLAY	30 - 60 gr.cm	2.0 - 4.5 gr.cm	60 gr or more
F.FWD	55 - 120 gr.cm	----	----
REW	55 - 120 gr.cm	----	----

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

EACH PRECAUTION IN THIS MANUAL SHOULD BE FOLLOWED DURING SERVICING. COMPONENTS IDENTIFIED WITH THE IEC SYMBOL Δ IN THE PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATED COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. WHEN REPLACING A COMPONENT IDENTIFIED BY Δ , USE ONLY THE REPLACEMENT PARTS DESIGNATED, OR PARTS WITH THE SAME RATINGS OF RESISTANCE, WATTAGE OR VOLTAGE THAT ARE DESIGNATED IN THE PARTS LIST IN THIS MANUAL. LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS MUST BE MADE TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE PRODUCT TO THE CUSTOMER.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.
Regular type resistors are less than 1/4 W carbon type and 0 ohm chip resistors.
Regular type capacitors are less than 50 V and less than 1000 μ F type of Ceramic type and Electrical type.

PACKING & ACCESSORIES

REF.NO.	PART NO.	DESCRIPTION
	614 291 9385	CARTON
	645 025 2471	CUSHION L,POLYFOAM,L
	645 025 2488	CUSHION R,POLYFOAM,R
	645 025 4314	POLYBAG,UNIT
	645 025 6042	LABEL LASER
	645 026 9721	LABEL SAFETY
	614 291 9569	INSTRUCTION MANUAL
Δ	645 022 1576	AC CORD

CABINET & CHASSIS

REF.NO.	PART NO.	DESCRIPTION
1	645 026 9776	ASSY,CABINET FRONT
2	645 024 3950	LID CASSETTE
3	645 024 3974	LID CD
4	645 025 2068	PANEL TOP
5	645 024 4018	HANDLE
6	645 026 9806	ASSY,CABINET REAR
7	645 024 3967	LID BATTERY
8	645 025 2563	RUBBER CUSHION CD,SOFT
9	645 025 2570	RUBBER CUSHION CD,HARD
10	645 025 2440	SPEAKER CLAMP:99
11	645 025 2099	ROTARY KNOB,VOLUME
12	645 025 2105	ROTARY KNOB,TONE
13	645 025 2136	BUTTON,CASSETTE,REC
14	645 025 2143	BUTTON,CASSETTE,PLAY
15	645 025 2150	BUTTON,CASSETTE,REW
16	645 025 2167	BUTTON,CASSETTE,F FWD
17	645 025 2174	BUTTON,CASSETTE,STOP / EJECT
18	645 025 2181	BUTTON,CASSETTE,PAUSE
20	645 025 2082	ROTARY KNOB,TUNING
21	645 025 2129	SLIDE KNOB,FUNCTION SWITCH
22	645 025 2112	SLIDE KNOB,BAND SW
25	645 025 2556	CD BRACKET,CD MAIN
26	645 026 3941	ASSY,PULLEY,CD CHUCKING
31	645 025 1559	ASSY,GEAR,CASSETTE DOOR
32	645 025 2297	CASS DOOR SPRING
33	645 025 1542	ASSY,GEAR,CD DOOR
34	645 025 2594	CD DOOR SPRING
36	645 024 4001	DIAL POINTER,TUNING
37	645 025 2204	DIAL BARCKET,TUNING POINTER
39	645 025 2310	CASS BUTTON SHAFT
40	645 025 2280	PLATE SWITCH RECORDING
41	645 025 2259	TUNING GEAR SMALL
42	645 025 2242	TUNING GEAR,PVC
43	645 025 2211	CONTROL BRACKET
45	645 025 4291	SPRING ANTENNA CONTACT
	645 025 2334	FOOT RUBBER,18X3
	645 017 1895	FIBRE,WASHER,FRONT CABINET
	645 025 2365	SCREW 3X8,M PCB TO KEYBOARD
	645 017 1895	FIBRE,WASHER,TUNING KNOB

FIXING PARTS

REF.NO.	PART NO.	DESCRIPTION
Y01	645 025 2389	SCREW 3X18,CABINET REAR
Y02	645 025 2365	SCREW 3X8,PANEL TOP
Y03	645 025 2396	SCREW 3X8,ANTENNA
Y04	645 016 5078	SCREW,3X8,SPEAKER
Y05	645 016 5078	SCREW,3X8,ANT SPRING
Y07	645 016 5078	SCREW,3X8,GEAR
Y08	645 025 2358	SCREW 2.6X8,GEAR HOLDER
Y09	645 025 2402	SCREW 2X8,CD BRACKET
Y10	645 025 2372	SCREW 3X8,CASSETTE SHAFT
Y11	645 025 2426	SCREW 3X12,POWER TRANS
Y12	645 016 5078	SCREW,3X8,DECK MECHA
Y13	645 018 3690	SCREW 3X10,CD SW PWB
Y14	645 016 5078	SCREW,3X8,CONTROL PWB
Y15	645 016 5078	SCREW 3X8,MAIN PWB
Y16	645 016 5078	SCREW,TUNING GEAR
Y17	645 016 5078	SCREW,3X8,TUNING BRACKET
Y18	645 025 4307	SCREW,S 3X12,TUNING KNOB
Y19	645 018 0521	SCREW,3X12,BRACKET
Y20	645 025 2600	SPECIAL SCREW,CD
Y21	645 025 2419	SCREW 2.6X16,TUNING GEAR
Y22	645 016 5078	SCREW,3X8,PWB BRACKET
Y23	645 023 7935	TOOTH WASHER 2.6,TUNING GEAR
Y24	411 025 1901	SCREW,S-TPG PAN 2X3

ELECTRICAL PARTS

REF.NO.	PART NO.	DESCRIPTION
51	645 020 3534	ROD ANTENNA
52	645 025 1931	4" SPEAKER
53	Δ 645 026 9561	POWER TRANSFORMER
FU001	Δ 645 014 1447	FUSE
CN006	645 025 1993	FLAT WIRE,12P,MAIN-FRONT

MAIN P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
71	614 292 1715	ASSY,PWB AMP-TU-CD
	645 020 3190	HEADPHONE JACK
	645 026 7949	BRACKET-E,AC SOCKET
	645 026 6546	SCREW 2.6X5,Q801
	645 014 1966	SCREW,PVC
	645 026 9929	SCR 3X12,AC SOCKET
	645 026 6522	CABINET MOUNTING PLATE,Q801
C0109	645 025 1702	POLY CAP 1000PF 50V
C0111	645 020 3138	POLY CAP 120PF 50V
C0112	403 061 9003	POLYESTER 4700P M 50V
C0115	403 057 1202	POLYESTER 0.01U M 50V
C0116	403 057 1202	POLYESTER 0.01U M 50V
C0130	403 060 6904	POLYESTER 3300P M 50V
C0131	403 060 6904	POLYESTER 3300P M 50V
C0201	403 058 1904	POLYESTER 1500P M 50V
C0203	403 060 8908	POLYESTER 0.033U M 50V

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
C0204	403 059 4409	POLYESTER 2200P M 50V
C0210	403 059 4409	POLYESTER 2200P M 50V
C0212	403 058 1904	POLYESTER 1500P M 50V
C0214	403 060 8908	POLYESTER 0.033U M 50V
C0221	403 061 9003	POLYESTER 4700P M 50V
C0229	403 058 1904	POLYESTER 1500P M 50V
C0301	403 059 4409	POLYESTER 2200P M 50V
C0302	403 059 4409	POLYESTER 2200P M 50V
C0303	403 060 8908	POLYESTER 0.033U M 50V
C0304	403 060 8908	POLYESTER 0.033U M 50V
C0314	403 057 3800	POLYESTER 0.1U M 50V
C0317	403 057 3800	POLYESTER 0.1U M 50V
C0501	403 057 3800	POLYESTER 0.1U M 50V
C0601	403 059 8902	POLYESTER 0.22U M 50V
C0604	403 060 8908	POLYESTER 0.033U M 50V
C0606	403 061 9607	POLYESTER 0.047U J 50V
C0608	403 060 5204	POLYESTER 3300P J 50V
C0609	403 058 4608	POLYESTER 0.15U J 50V
C0612	403 056 8905	POLYESTER 1000P M 50V
C0613	403 057 3800	POLYESTER 0.1U M 50V
C0614	403 058 4004	POLYESTER 0.015U M 50V
C0615	403 058 9108	POLYESTER 0.018U J 50V
C0623	403 059 4409	POLYESTER 2200P M 50V
C0625	403 060 8908	POLYESTER 0.033U M 50V
C0702	403 135 4507	ELECT 1000U M 10V
C0808	403 135 0004	ELECT 2200U M 25V
CF001	645 016 9151	CERAMIC FILTER
CF002	645 020 9468	CERAMIC FILTER,AM / FM FCC
CF003	645 025 2051	CERAMIC RESONATOR,CD MAIN
CN001	645 017 2045	4P WAFER,CASS
CN002	645 016 9359	3P WAFER,CASS
CN007	645 016 9342	2P WAFER,CD MAIN
CN008	645 025 1924	5P WAFER,CD MAIN
CN009	645 026 8823	8P WAFER,CD MAIN
CN010	645 017 2052	6P WAFER,CD MAIN
CN011	645 022 1590	AC SOCKET,VDE APP
CN012	645 020 6771	2P WAFER,CASS
CN013	645 025 1917	4P WAFER,CASS
D0101	645 016 8956	DIODE,SWITCH,AM / FM
D0102	645 016 8956	DIODE,SWITCH,AM / FM
D0103	645 014 0945	A F C FV-1043,AM / FM
D0104	645 016 8956	DIODE,SWITCH,AM / FM
D0301	645 016 9250	DIODE,RECTIFIER,PWR
D0401	645 025 1689	DIODE,SWITCH,GMB01-BT,CD MAIN
D0402	645 025 1689	DIODE,SWITCH,GMB01-BT,CD MAIN
D0403	645 016 8956	DIODE,SWITCH,CD MAIN
D0404	645 025 1689	DIODE,SWITCH,GMB01-BT,CD MAIN
D0405	645 016 8956	DIODE,SWITCH,CD MAIN
D0406	645 016 8956	DIODE,SWITCH,CD MAIN
D0801	△ 645 016 9250	DIODE,RECTIFIER,PWR
D0802	△ 645 016 9250	DIODE,RECTIFIER,PWR
D0803	△ 645 016 9250	DIODE,RECTIFIER,PWR
D0804	△ 645 016 9250	DIODE,RECTIFIER,PWR
D0806	645 016 8956	DIODE,SWITCH,CD MAIN
D0807	645 016 8956	DIODE,SWITCH,CD MAIN
D0808	645 016 8956	DIODE,SWITCH,CD MAIN
FH001	645 014 2246	FUSE HOLDER
FU002	△ 645 026 7925	PROTECTOR,PWR
HS001	645 025 2457	HEAT SINK
IC001	645 025 1573	IC LA1826A
IC002	645 020 3237	IC TA2068N
IC003	645 016 9182	IC TA8227P
IC004	645 025 1597	IC LA6543F
IC005	645 025 1610	IC LC78622E
IC006	645 025 1603	IC LA9240M
IC007	645 025 1580	IC LA6541D
L0001	645 025 1498	ASSY,BAR ANTENNA
L0002	645 020 9338	FM COIL,FM ANTENNA

REF.NO.	PART NO.	DESCRIPTION
L0003	645 014 1089	FM COIL,FM RF
L0004	645 014 1072	FM COIL,FM OSC FCC
L0005	645 014 1041	OSC,AM OSC
L0006	645 025 1733	IFT,AM / FM
L0007	645 025 1757	IFT,AM / FM
L0008	645 025 1740	IFT,AM / FM
L0009	645 014 1058	BIAS/OSC,AC BIAS
L0805	645 020 9321	CHOKE COILS,100UH
PVC1	645 025 6592	PVC,AM / FM VC 1-4, TC 1-4
Q0201	645 025 1665	TR,2SC3330U
Q0202	645 016 9205	TRANSISTOR,PWR
Q0203	645 025 1641	TR,2SA1346-AC,
Q0301	645 025 1658	TR,2SD1936-U-AC
Q0302	645 025 1658	TR,2SD1936-U-AC
Q0401	645 025 1641	TR,2SA1346-AC
Q0402	645 025 1641	TR,2SA1346-AC
Q0403	645 025 1634	TR,2SA1317
Q0404	645 025 1634	TR,2SA1317
Q0405	645 025 1672	TR,2SC3400
Q0406	645 016 9205	TRANSISTOR
Q0407	645 025 1641	TR,2SA1346-AC
Q0601	645 025 1634	TR,2SA1317
Q0801	645 026 9530	TR,2SD2061F
Q0805	645 025 1627	TR,2SB764E
R0301	402 004 5805	FUSIBLE RES 27 J- 1/4W,PWR
SW001	645 025 1788	SWITCH,SKE-22F09-G8-NS,AM / FM
SW002	645 025 1795	SWITCH,SKU-43D08-G8-NS, FUNCTION
SW003	645 020 9352	PUSE SWITCH,PLAY/REC
SW004	645 016 1896	SWITCH,BEAT CANCEL
VR101	645 025 6585	SEMI-FIXED,AM / FM
VR301	645 025 1726	ROTARY VR
VR302	645 025 1719	ROTARY VR
Z0801	△ 645 025 1696	ZENER DIODE,PWR
Z0802	645 017 1703	ZENER DIODE,AM / FM

FRONT P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
72	614 292 1722	ASSY,PWB,FRONT
D0901	645 016 8956	DIODE,SWITCH
D0902	645 016 8956	DIODE,SWITCH
D0903	645 016 8956	DIODE,SWITCH
D0904	645 016 8956	DIODE,SWITCH
D0905	645 016 8956	DIODE,SWITCH
D0906	645 016 8956	DIODE,SWITCH
LED02	645 025 1771	LED,PROGRAM
LED03	645 025 1771	LED,REPEAT
LED04	645 025 1771	LED,P / P
LED05	645 025 2044	LED DISPLAY,RED
SW901	645 025 1801	SWITCH EVQ-QB205K,PLAY / PAUSE
SW902	645 025 1801	SWITCH EVQ-QB205K,STOP
SW903	645 025 1801	SWITCH EVQ-QB205K,PROGRAM
SW904	645 025 1801	SWITCH EVQ-QB205K,F B
SW905	645 025 1801	SWITCH EVQ-QB205K,F F
SW906	645 025 1801	SWITCH EVQ-QB205K,REPEAT

CD SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
73	614 292 3863	ASSY,PWB CD SWITCH
SW907	645 025 1818	MICRO SW LF-101-0.CD OPEN/CLOS

BATTERY TERMINAL P.W.BOARD ASSY

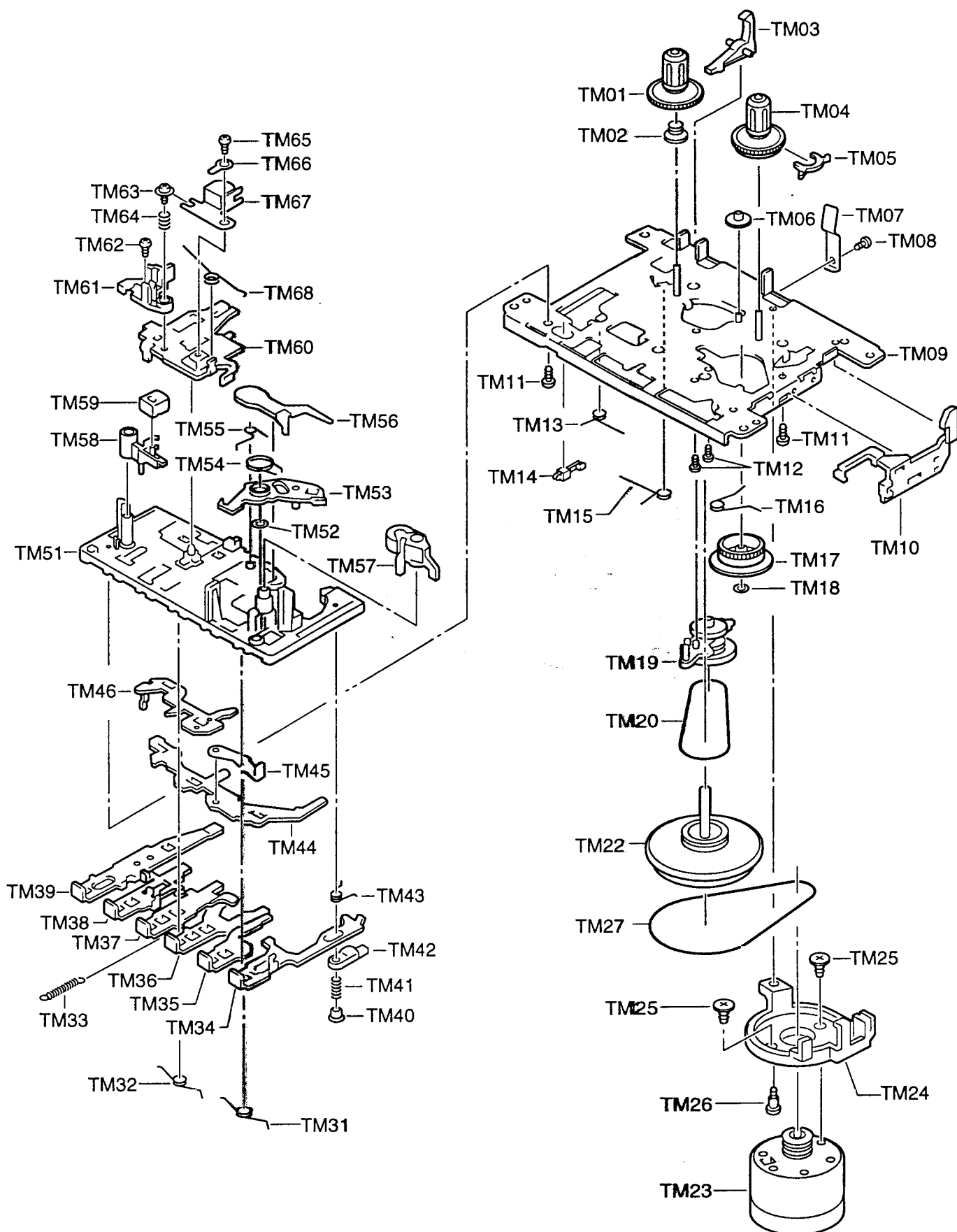
REF.NO.	PART NO.	DESCRIPTION
74	614 292 1043	ASSY,PWB,BATT
	645 025 2013	BATTERY SPRING(-)

PARTS LIST

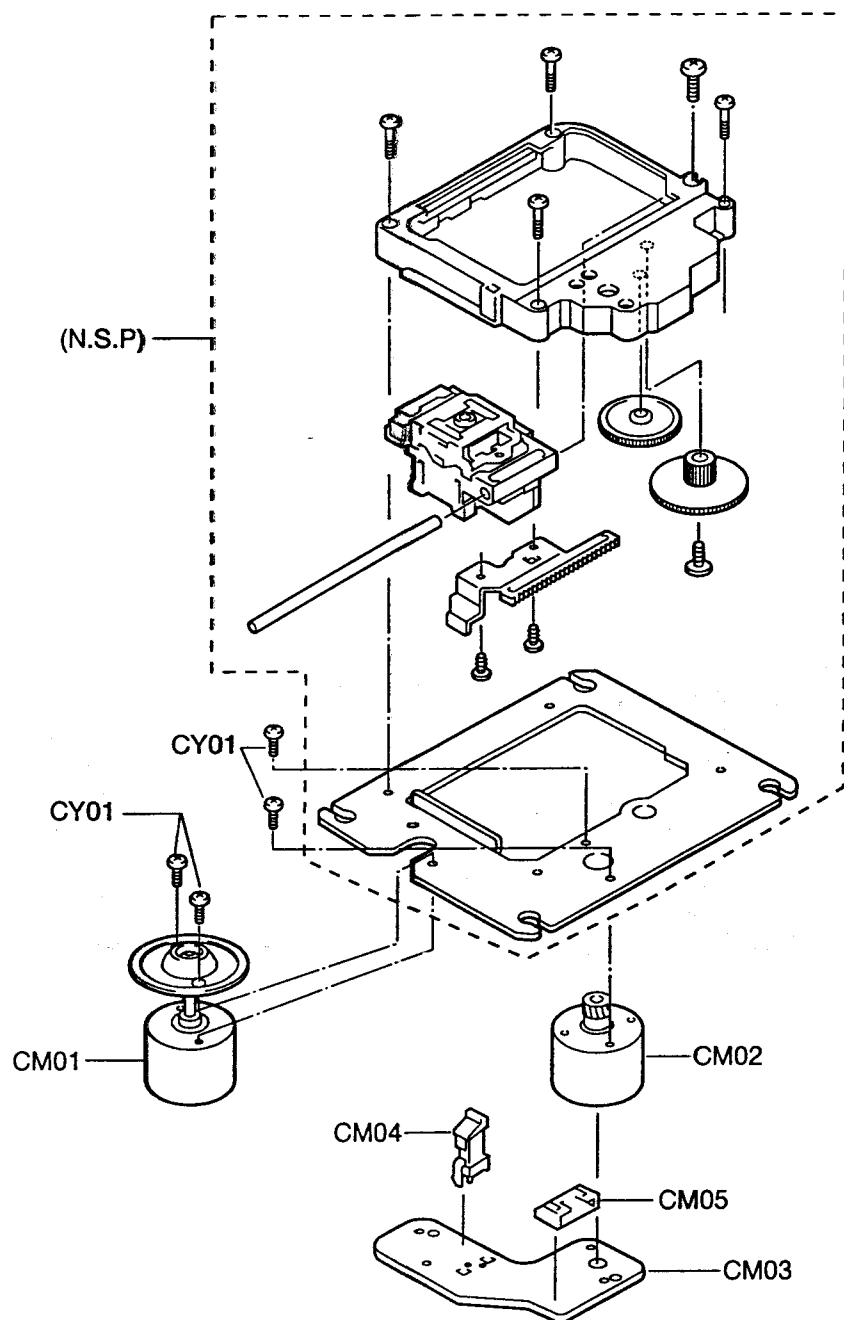
TAPE MECHANISM (TK20FX-S830-900)

REF.NO.	PART NO.	DESCRIPTION
TM01	645 023 8116	S REEL HUB
TM02	645 011 5707	B SPRING
TM03	645 009 1674	RECORD SAFETY LEVER
TM04	645 023 8895	TAKE UP REEL ASSY
TM05	645 009 1629	SENSOR
TM06	645 009 1568	FF GEAR
TM07	645 022 1729	PACK SPRING PLATE
TM08	645 011 5967	C SCREW 2X3
TM09	645 009 1346	CHASSIS ASSY
TM10	645 009 1780	EJECT SLIDE LEVER
TM11	645 014 6862	PB SCREW
TM12	645 011 5899	CT SCREW 2X4.5
TM13	645 009 1445	PS LEVER SPRING
TM14	645 011 5844	SWITCH,MSW-1541T
TM15	645 009 1476	REC BUTTON LEVER SPRING
TM16	645 009 1438	E ACTUATOR SPRING
TM17	645 009 1490	CAM GEAR
TM18	645 011 5981	C WASHER 2X3.5X0.3
TM19	645 011 5516	RF CLUTCH ASSY
TM20	645 011 5813	F BELT W
TM22	645 023 8123	ASSY,FLYWHEEL
TM23	645 025 2617	ASSY,MOTOR
TM24	645 021 5001	MOTOR BRACKET
TM25	645 011 3727	MOTOR COLLER SCREW
TM26	645 011 3734	MOTOR BRACKET SCREW
TM27	645 023 8062	M BELT(C)
TM31	645 009 1421	BUTTON LEVER SPRING(B)
TM32	645 009 1414	BUTTON LEVER SPRING(A)
TM33	645 009 3210	PLAY BUTTON LEVER SPRING
TM34	645 023 8147	PAUSE BUTTON LEVER
TM35	645 011 0795	STOP BUTTON LEVER
TM36	645 011 0788	FF BUTTON LEVER
TM37	645 011 0771	REW BUTTON LEVER
TM38	645 011 0764	PLAY BUTTON LEVER
TM39	645 011 0757	REC BUTTON LEVER
TM40	645 009 1384	PAUSE STOPPER
TM41	645 009 1391	PAUSE LEVER SPRING
TM42	645 011 1211	PAUSE LEVER(E)
TM43	645 009 1407	P CONTROL SPRING
TM44	645 009 1278	PUSH BUTTON ACTUATOR
TM45	645 009 1339	E KICK LEVER
TM46	645 009 1285	SWITCH ACTUATOR
TM51	645 009 1308	BASE ASSY
TM52	645 011 5998	C WASHER 1.45X3.8X0.5
TM53	645 009 1520	GEAR PLATE ASSY
TM54	645 009 1513	GEAR PLATE SPRING
TM55	645 009 1452	M CONTROL SPRING
TM56	645 009 1506	SENSING LEVER
TM57	645 009 1612	PINCH ROLLER ARM ASSY
TM58	645 009 1711	MG ARM
TM59	645 016 5252	MG ERASE
TM60	645 009 1377	HEAD PANEL
TM61	645 009 1353	HEAD BASE
TM62	645 013 7945	SCREW
TM63	645 014 6756	S SCREW
TM64	645 009 1551	AZIMUTH SPRING
TM65	645 011 5875	B SCREW
TM66	645 011 5929	B3 LUG
TM67	645 025 2518	R/P HEAD TC-951,STEREO
TM68	645 009 1360	PANEL P SPRING

EXPLODED VIEW(TAPE MECHANISM)



EXPLODED VIEW(CD MECHANISM)



N.S.P : Not available as service parts.

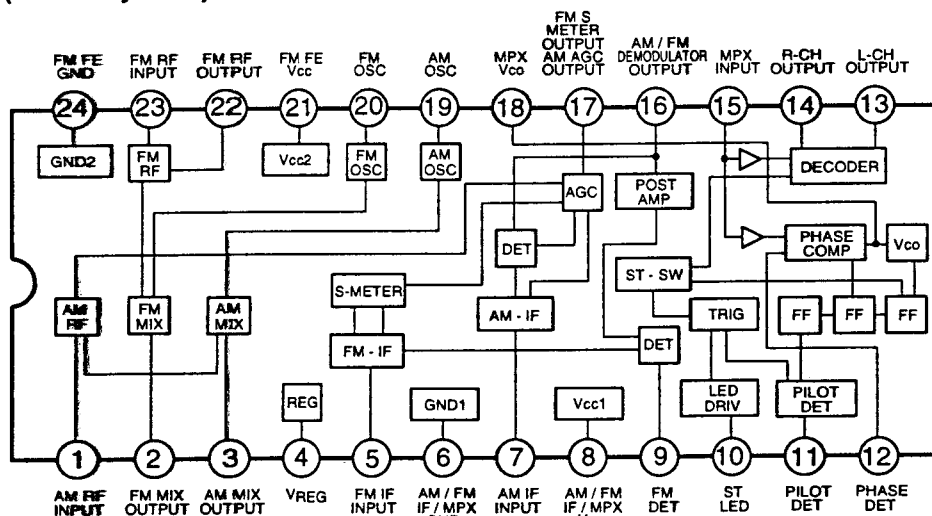
PARTS LIST

CD MECHANISM (CD94V5)

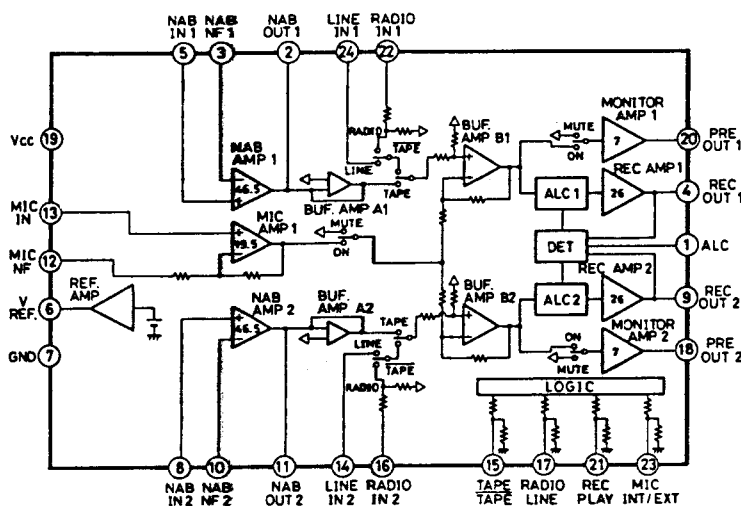
REF.NO.	PART NO.	DESCRIPTION
	645 025 2532	CD MECHANISM (CD94V5)
CM01	620 222 8105	ASSY,MOTOR,SPINDLE,2V
CM02	620 222 8112	ASSY,MOTOR,SLED,6V
CM03	620 223 2911	PWB,MOTOR
CM04	620 223 2928	SWITCH,LEAF
CM05	620 021 8436	PLUG,6P
CY01	411 019 9906	SCREW PAN PCS 1.7X3

IC BLOCK DIAGRAM & DESCRIPTION

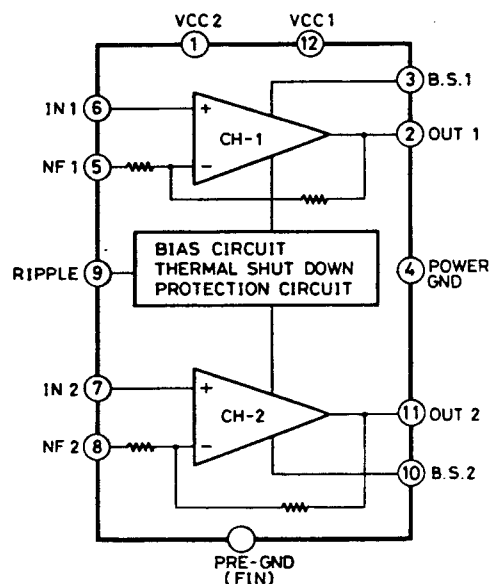
IC1 LA1826A(Tuner System)



IC2 TA2068(Pre-Amplifier for Tape-Deck)



IC3 TA8227P (Main(Power)-Amplifier)



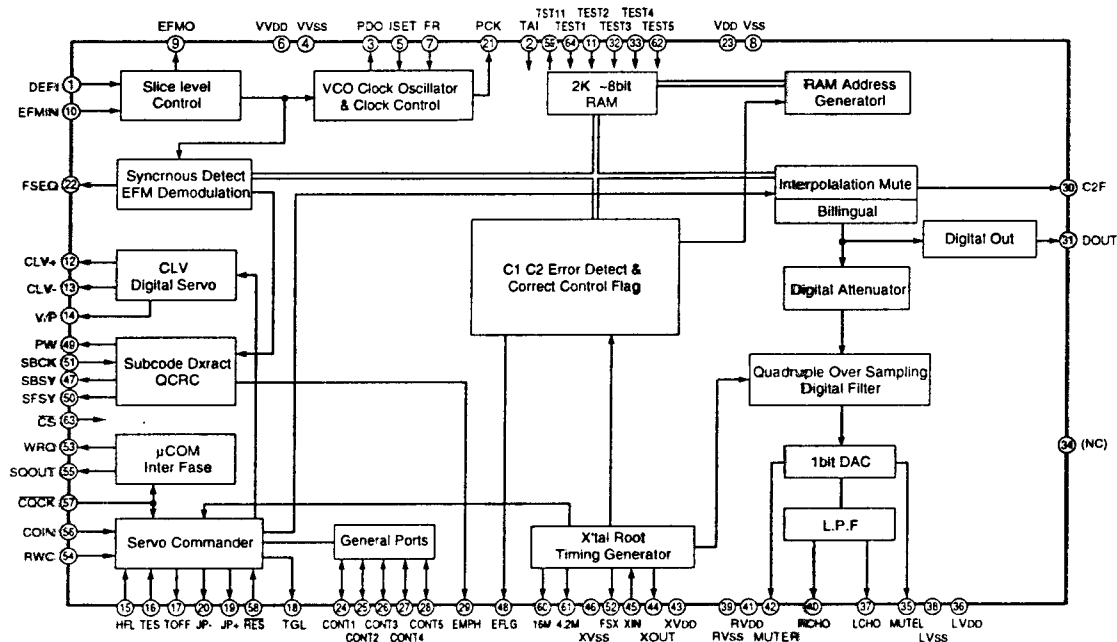
IC4 LC6543F(Micro-Processor)

No.	Name	I/O	Description
1	DRF	I/O	RF signal detect
2	VDD	-	GND
3	SQOUT	I/O	Interface for LC7822
4	COIN	I/O	Interface for LC7822
5	CQCK	I/O	Interface for LC7822
6	WRQ	I/O	Interface for LC7822
7	RWC	I/O	Interface for LC7822
8	A-MUTE	I/O	Audio mute control
9	FEED+	I/O	Sled motor control
10	FEED-	I/O	Sled motor control
11	PUIN	I/O	PU-IN switch
12	LID-SW	I/O	Lid open switch
13	D-MUTE	I/O	Mute control
14	KEY-IN	I/O	Key Input
15	OSC2	O	Clock output

No.	Name	I/O	Description
16	OSC1	I	Clock input
17	TEST	I	VSS
18	VSS	-	GND
19	RESET	I	Reset
20	SEG-A	I/O	Light up Signal for LED (Segment a)
21	SEG-B	I/O	Light up Signal for LED (Segment b)
22	SEG-C	I/O	Light up Signal for LED (Segment c)
23	SEG-D	I/O	Light up Signal for LED (Segment d)
24	SEG-E	I/O	Light up Signal for LED (Segment e)
25	SEG-F	I/O	Light up Signal for LED (Segment f)
26	SEG-G	I/O	Light up Signal for LED (Segment g)
27	SEG-H	I/O	Light up Signal for LED (Segment h)
28	DIGIT-1	I/O	Common Signal for LED
29	DIGIT-2	I/O	Common Signal for LED
30	PROG	I/O	Program LED

IC5 LC78622E(Digital Signal Processor)

No.	Name	I/O	Function
35	MUTEL	O	L-channel 1-bit DAC. Output of muting for L-channel.
36	LVDD	-	L-channel 1-bit DAC. Power supply for L-channel.
37	LCHO	O	L-channel 1-bit DAC. Output signal for L-channel.
38	LVSS	-	L-channel 1-bit DAC. Ground terminal for L-channel. (Surely connect to 0V)
39	RVSS	-	R-channel 1-bit DAC. Ground terminal for R-channel. (Surely connect to 0V)
40	RCHO	O	R-channel 1-bit DAC. Output signal for R-channel.
41	RVDD	-	R-channel 1-bit DAC. Power supply for R-channel.
42	MUTER	O	R-channel 1-bit DAC. Output of muting for R-channel.
43	XVDD	-	Power supply terminal for crystal oscillation.
44	XOUT	O	Connection terminal for crystal oscillation. (16.9344MHz)
45	XIN	I	Connection terminal for crystal oscillation. (16.9345MHz)
46	XVSS	O	Ground terminal for crystal oscillation. (Surely connect to 0V)
47	SBSY	O	Output of Synchronizing signal for sub-code block.
48	EFLG	O	Terminal of correction monitor for C1, C2, single and double.
49	PW	O	Output for P, Q, R, S, T, U and W of sub-code.
50	SFSY	O	Output of Synchronizing signal for sub-code flame. When the stand-by the sub-code, leading edge.
51	SBCK	I	Input terminal of reading clock for sub-code.
52	FSX	O	Output terminal of synchronizing signal divided from crystal oscillation (7.35kHz).
53	WRQ	O	Output of stand-by signal for output the sub-code Q.
54	RWC	I	Input terminal of control signal for read/write.
55	SQOUT	O	Output terminal for sub-code Q.
56	COIN	I	Input terminal for command from micro-processor.
57	CQCK	I	Input of loading clock for command, or fetching clock for sub-code from SQOUT.
58	RES	I	Input terminal of system reset. When ON the power supply, ones the "L".
59	TST11	O	Output terminal for test. Use the Open status(Normal the output is "L").
60	16M	O	Output terminal for 16.9344MHz.
61	4.2M	O	Output terminal for 4.2336MHz.
62	TEST5	I	Input for test. (Surely connect to 0V)
63	CS	I	Input terminal for chip select signal. (When the un-control, connect to 0V)
64	TEST1	I	Input for test. (Surely connect to 0V)



IC BLOCK DIAGRAM & DESCRIPTION

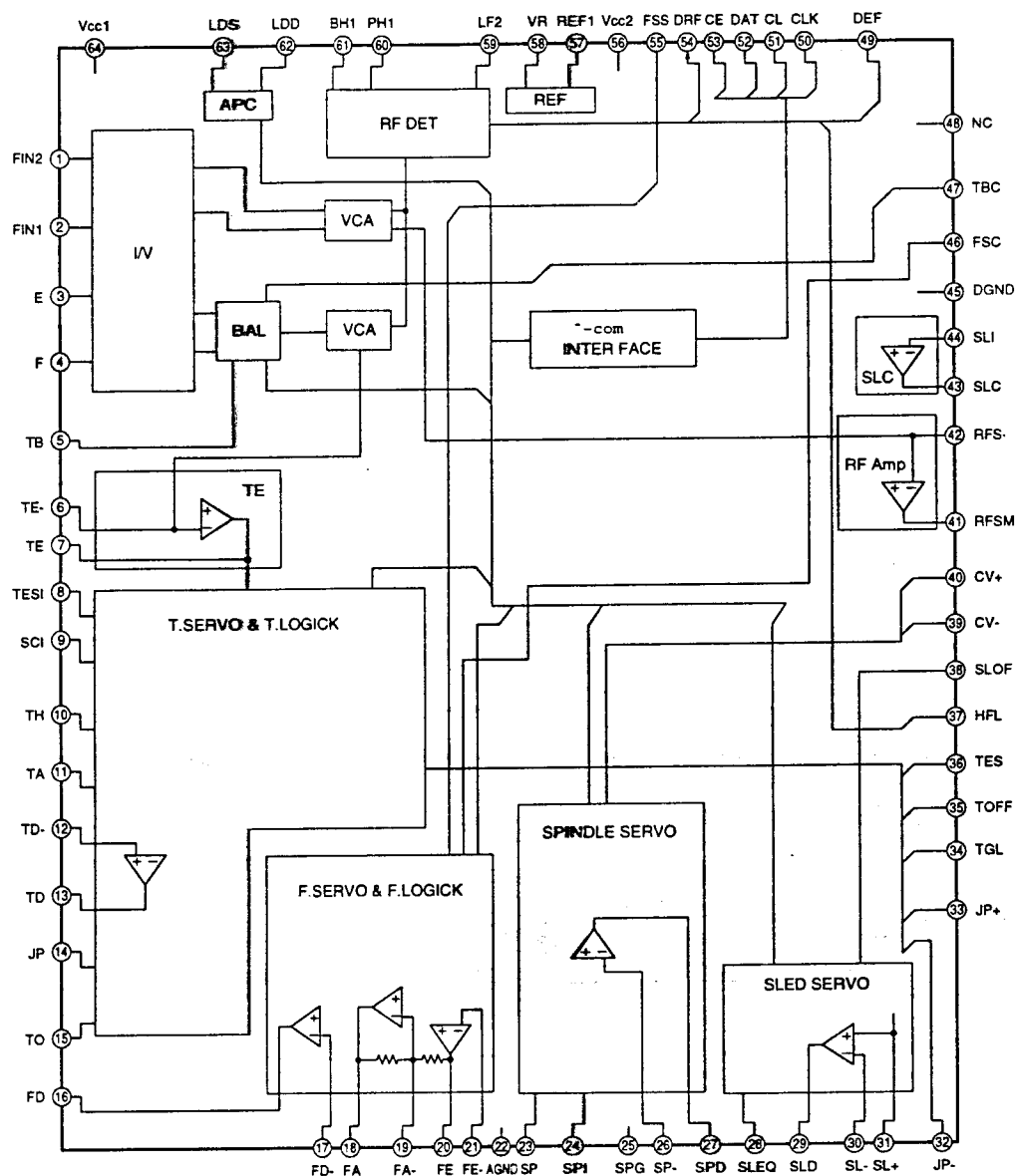
IC6 LA9240M(CD RF Servo Signal Processor)

No.	Name	I/O	Function
1	FIN2	I	Connection pin for photo diode of pickup.
2	FIN1	I	FIN2+FIN1=RF, FIN2-FIN1=FE
3	E	I	Connection pin for photo diode of pickup.
4	F	I	E-F=TE
5	TB	I	Input pin for DC ingredient of TE signal.
6	TE-	I	Connection pin for gain setting resistor of TE signal to TE signal pin.
7	TE	O	Output pin for Tracking Error signal.
8	TES1	I	Input pin for tracking error sense comparator. TE signal through band pass, and inputted.
9	SCI	I	Input pin for shock detection.
10	TH	I	Connection pin for time constant setting of tracking gain.
11	TA	O	Output pin for TA amplifier.
12	TD-	I	Connection pin for constant of tracking phase compensation, consist of between TD and VR.
13	TD	I	Connection pin for constant of tracking phase compensation.
14	JP	I	Connection pin for amplitude setting of tracking jump (kick pulse) signal.
15	TO	O	Output pin for tracking control signal.
16	FD	O	Output pin for focusing control signal.
17	FD-	I	Connection pin for constant of focusing phase compensation, consist of between FD and FA.
18	FA+	I	Connection pin for constant of focusing phase compensation, consist of between FD- and FA-.
19	FA-	I	Connection pin for constant of focusing phase compensation, consist of between FA and FE.
20	FE	O	Output pin for Focusing Error signal.
21	FE-	I	Connection pin for gain setting resistor of FE signal to FE signal pin.
22	AGND	-	Ground for analog signal.
23	SP	O	Output pin for signal end of input signal of the CV+, CV- pin.
24	SPI	I	Input pin for spindle amplifier.
25	SPG	I	Connection pin for gain setting resistor, when spindle 12cm mode.
26	SP-	I	Connection pin for constant of spindle phase compensation with SPD pin.
27	SPD	O	Output pin for spindle control signal.
28	SLEQ	I	Connection pin for constant of sled phase compensation
29	SLD	O	Output pin for sled control signal.
30	SL-	I	Input pin for sled signal from micro processor.
31	SL+	I	
32	JP-	I	Input pin for tracking jump signal from digital signal processor.
33	JP+	I	
34	TGL	I	Input pin for tracking gain control signal from digital signal processor. TGL=H: gain low

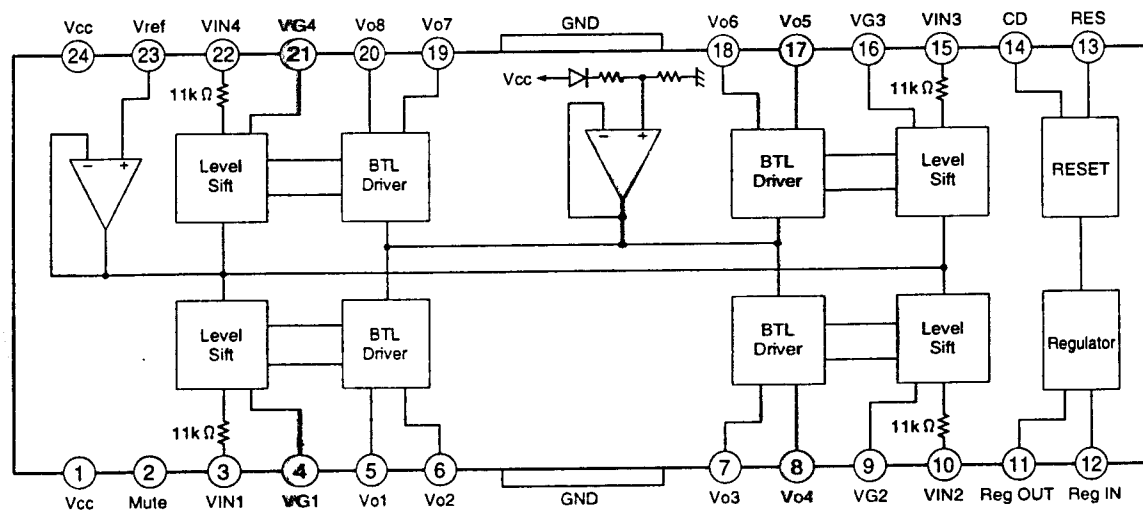
No.	Name	I/O	Function
35	TOFF	I	Input pin for tracking off control signal from digital signal processor. TOFF=H: off
36	TES	O	Output pin for tracking error sense signal to digital signal processor.
37	HFL	I	High frequency level signal use detection main-beam position is on the pit or mirror.
38	SLOF	I	Input pin for sled servo off control.
39	CV-	I	Input pin for constant linear velocity error signal from digital signal processor.
40	CV+	I	
41	RFSM	O	Output pin for RF signal.
42	RFS-	I	Connection pin for gain setting of RF and constant setting of 3T compensation of the EFM signal with RFSM pin.
43	SLC	O	Slice level control signal is output pin, it control level of data-slice by digital signal processor of the RF waveform.
44	SLI	I	Input pin for level control of data-slice by digital signal processor.
45	DGND	-	Ground for digital signal.
46	FSC	O	Input pin for VCO control amplifier, consist of PLL loop filter with VCOC and PDO of digital signal processor.
47	TBC	O	Tracking Balance Control
48	NC	-	Not connection
49	DEF	O	Output pin for defect detection of disc.
50	CLK	I	Input pin for reference clock pulse, input 4.23MHz of digital signal processor.
51	CL	I	Input pin of clock pulse for command from micro processor.
52	DAT	I	Input pin of data for command from micro processor.
53	CE	I	Input pin of chip enable for command from micro processor.
54	DRF	O	Detect RF signal is output pin for RF level detection.
55	FSS	I	Focus Serch Select
56	VCC2	-	VCC for servo and digital root.
57	REFI	I	Bus control connection pin for reference voltage.
58	VR	O	Output pin for reference voltage.
59	LF2	I	Connection pin for taim constant setting of defect detection of the disc.
60	PH1	I	Capacitor connection pin for peak-hold of RF signal.
61	BH1	I	Capacitor connection pin for bottom-hold of RF signal.
62	LDD	O	Output pin of APC(Auto Power Control) circuit.
63	LDS	I	Input pin for APC(Auto Power Control) circuit.
64	VCC1	-	VCC for RF root.

IC BLOCK DIAGRAM & DESCRIPTION

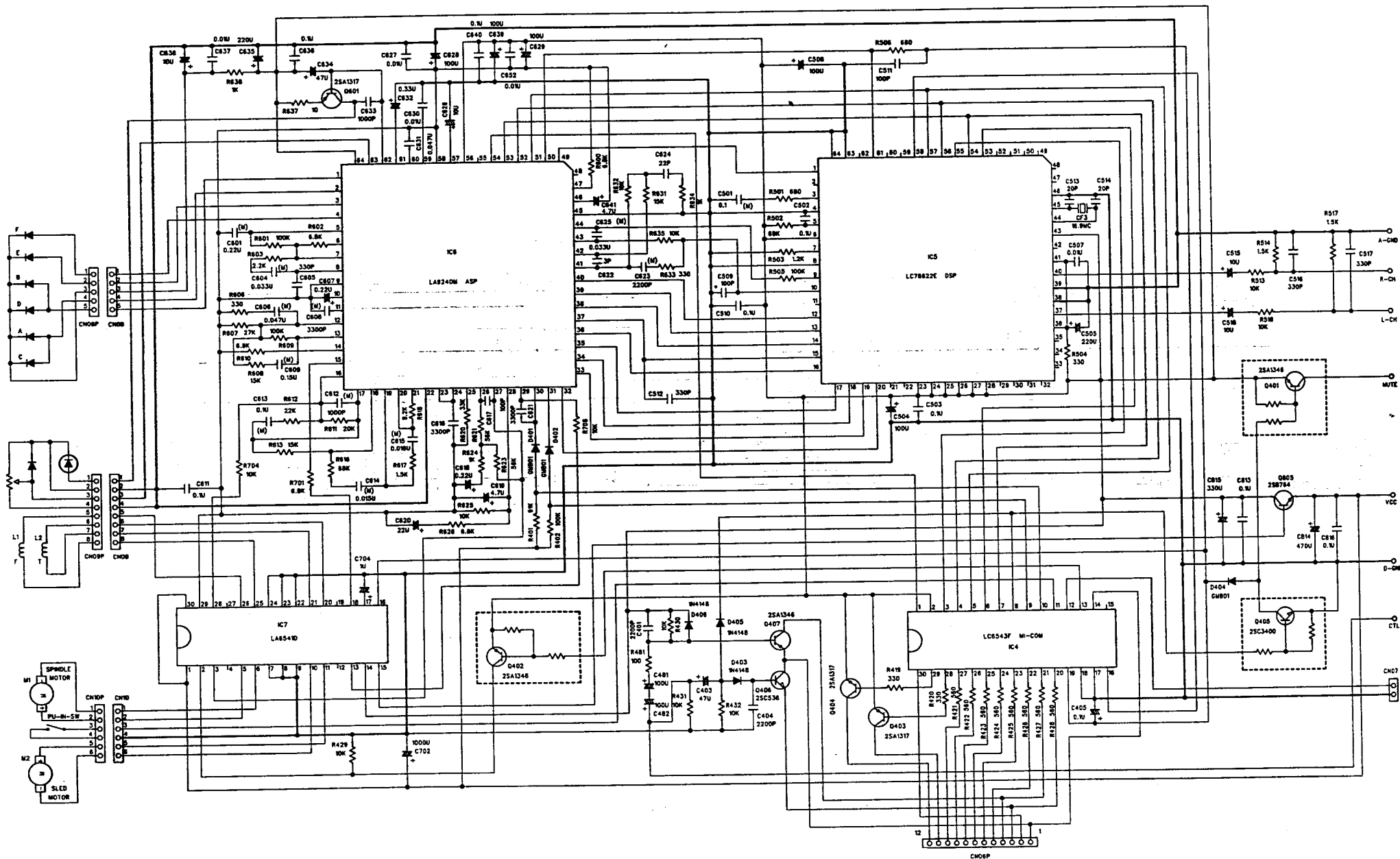
IC6 LA9240M(CD RF Servo Signal Processor)



IC7 LA6541D (CD Mechanism Pickup & Motor Driver)

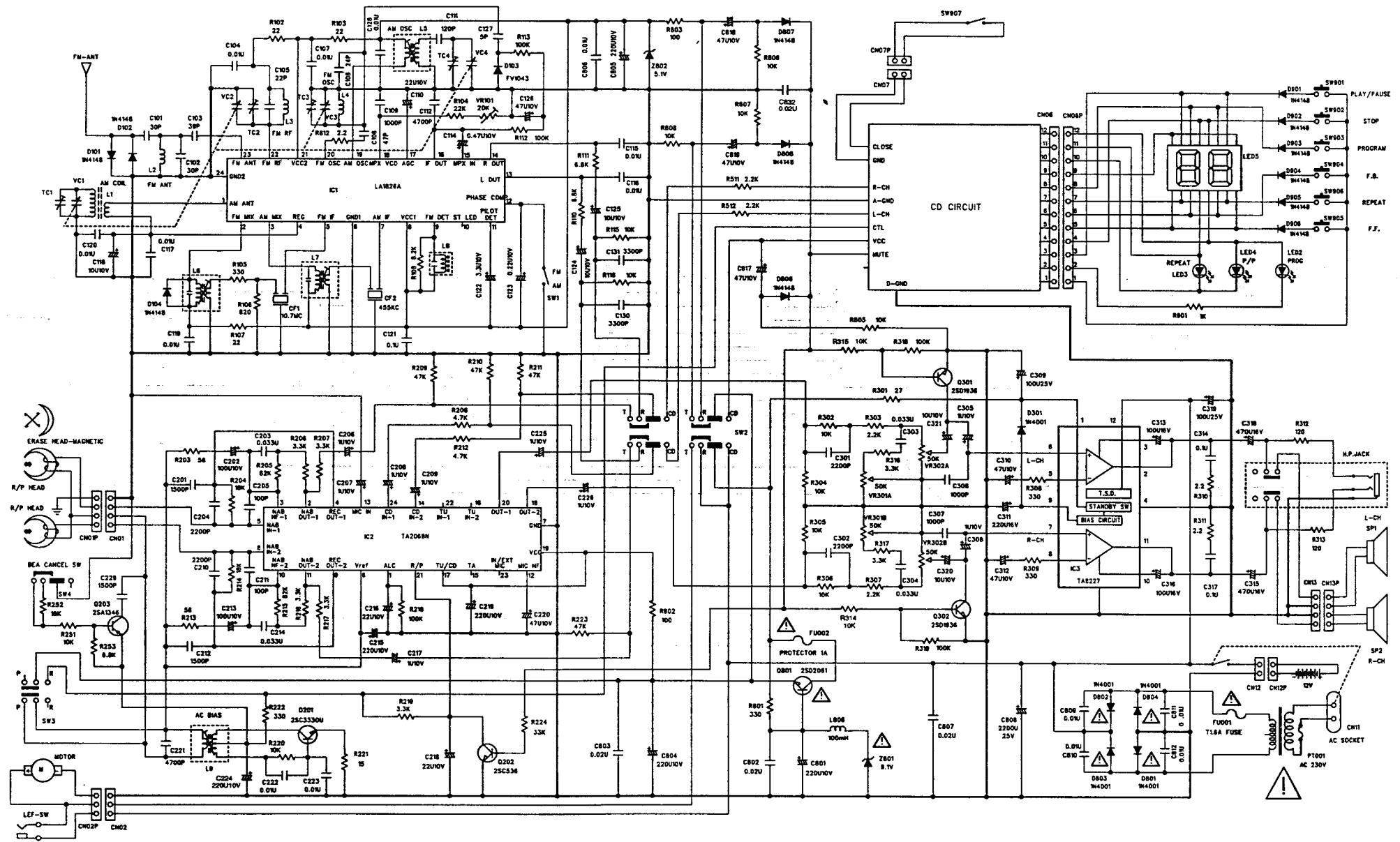


SCHEMATIC DIAGRAM(CD)



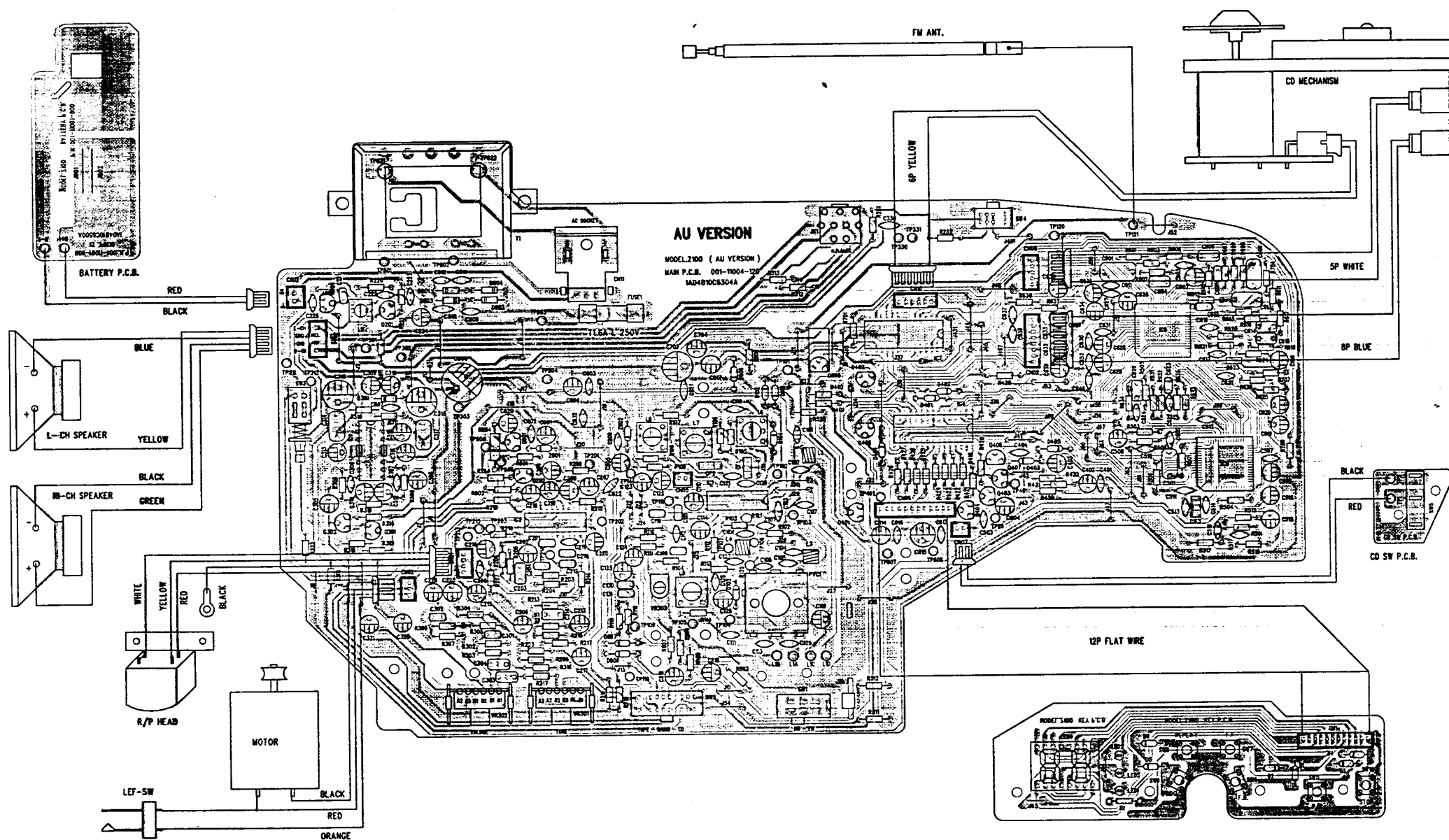
This is a basic schematic diagram.

SCHEMATIC DIAGRAM (TUNER, TAPE & MAIN AMPLIFIER)



This is a basic schematic diagram.

WIRING DIAGRAM



VOLTAGE OF IC & TRANSISTOR

TRANSISTOR (V)

Pin No.	B	C	E
Q201	0.3	6.8	0.2
Q202	0	0	0
Q203	6.6	6.8	0
Q301	0	0	0
Q302	0	0	0
Q401	5.0	0	5.0
Q402	4.9	0	5.0
Q403	4.6	2.4	5.0
Q404	4.6	2.4	5.0
Q405	0	4.0	0
Q406	0	5.0	3.0
Q407	4.9	3.0	5.0
Q601	4.4	1.5	5.0
Q801	9.0	12.0	8.2
Q805	7.6	5.0	8.2

IC1 LA1826

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FM (V)	1.2	5.2	5.2	1.2	1.2	0	1.2	5.2	5.2	3.3	4.2	4.3	1.0	0.9	4.6	3.9
AM (V)	1.2	5.2	5.2	1.2	1.2	0	1.2	5.2	5.2	3.4	3.3	0	1.6	1.6	1.0	0.5
Pin No.	17	18	19	20	21	22	23	24								
FM (V)	1.3	3.9	5.2	4.6	5.0	5.0	0.9	0								
AM (V)	1.2	0	5.2	5.0	5.2	5.2	0	0								

IC2 TA2068

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLAY (V)	0.1	2.0	2.0	1.9	3.0	2.0	0	2.0	1.9	2.0	2.0	2.0	1.6	1.6	0	1.9
REC (V)	0.8	1.9	1.9	2.0	2.0	2.0	0	2.0	2.0	1.6	2.0	2.0	1.6	1.6	0	1.9
Pin No.	17	18	19	20	21	22	23	24								
PLAY (V)	7.5	2.0	7.5	2.0	0	1.9	0.8	1.6								
REC (V)	7.2	2.0	7.2	2.0	6.5	1.9	0.8	1.6								

IC3 TA8227

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12
(V)	11.7	6.4	11.2	0	0.5	0	0	0.5	6.0	11.2	6.4	12

IC4 LC6543

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(V)	0	5.0	0	0	4.7	0	0	4.0	0	0	5.0	0	5.0	5.0	0	2.4
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
(V)	0	0	5.0	0.4	0.4	0.4	0.4	0.4	0.4	4.9	4.9	2.8	2.8	5.0		

IC5 LC78622

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(V)	0	0	0.3	0	1.5	5.0	1.5	0	2.5	2.5	0	0	0	5.0	0	0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
(V)	5.0	5.0	0	0	2.5	0	5.0	0	0	0	0	0	0	5.0	2.5	0
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
(V)	0	0	5.0	4.5	1.9	0	0	1.9	4.5	5.0	5.0	2.2	1.4	0	0.1	2.3
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
(V)	0	2.5	0	2.5	0	0	0	0	4.7	5.0	0	2.4	2.4	0	0	0

VOLTAGE OF IC & TRANSISTOR

IC6 LA9240

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(V)	2.5	2.5	2.5	2.5	1.7	2.5	2.5	2.0	2.5	1.7	2.4	2.5	2.5	2.5	2.5	2.5
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
(V)	2.5	2.5	2.2	2.5	2.5	0	1.8	1.8	2.5	2.5	2.5	2.4	2.5	2.5	2.2	0
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
(V)	0	5.0	5.0	0	0	5.0	0	0	1.7	2.4	2.5	2.5	0	2.4	2.4	0
Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
(V)	0	2.3	4.7	0	0	0	0	5.0	2.4	2.5	1.0	1.3	1.3	4.4	0	5.0

IC7 LA6541

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(V)	8.2	0	2.4	2.5	2.5	2.5	0	0	0	2.5	2.5	2.5	2.4	5.0	7.6	5.0
Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
(V)	4.9	2.4	2.5	2.5	2.5	0	0	0	2.5	2.5	2.5	2.4	2.5	8.2		

SANYO

SANYO Technosound Co., Ltd.
Osaka, Japan